WHAT IS CLAIMED IS:

1. An information processing apparatus for scheduling order of data reading from a recording medium, comprising:

first sorting means for sorting data items recorded on the recording medium based on playback times of the data items; and

second sorting means for sorting the data items sorted by the first sorting means based on recording positions of the data items on the recording medium, and using the sorting result as a result of scheduling the order of data reading from the recording medium.

2. An information processing apparatus according to claim 1, wherein at least one of video data and audio data is recorded in predetermined units on the recording medium.

3. An information processing apparatus according to claim 2, wherein the video data and the audio data in the predetermined units are alternately recorded on the recording medium.

4. An information processing apparatus according to claim 1, wherein the first sorting means comprises:

first detecting means for detecting, from data items

which have not been moved yet to a first queue among the data items recorded on the recording medium, a data item having earliest playback time; and

first moving means for moving and storing the data item detected by the first detecting means in the first queue.

5. An information processing apparatus according to claim 4, wherein the second sorting means comprises:

setting means for setting a schedule window corresponding to a range of the data items stored in the first queue, the range of the data items being subject to sorting based on the recording positions of the data items on the recording medium;

second detecting means for detecting, based on the recording positions of the data items on the recording medium, from the range of the data items in the schedule window, a data item to be moved to a second queue; and

second moving means for moving the data item detected by the second detecting means to the second queue.

6. An information processing apparatus according to claim 5, wherein:

the second sorting means further comprises first determination means for determining whether or not the second queue is empty; and

when the second queue is empty, the second detecting means detects, from the range of the data items in the schedule window, a data item which has an initial recording position on the recording medium.

7. An information processing apparatus according to claim 6, wherein:

the second sorting means further comprises second determination means for determining whether or not the range of the data items in the schedule window includes a data item recorded behind the recording position on the recording medium of the end data item of the second queue;

when the second queue is not empty, and the range of the data items in the schedule window does not include a data item recorded behind the recording position on the recording medium of the end data item of the second queue, the second detecting means detects, from the range of the data items in the schedule window, a data item which has an initial recording position on the recording medium; and

when the second queue is not empty, and the range of the data items in the schedule window includes a data item which is recorded behind the recording position on the recording medium of the end data item of the second queue, the second detecting means detects, from the range of the data items in the schedule window, a data item which is

recorded behind the recording position on the recording medium of the end data item of the second queue and which is closest to the recording position on the recording medium of the end data item of the second queue.

8. An information processing apparatus according to claim 5, wherein:

the second sorting means further comprises third determination means for determining whether or not the data item moved to the second queue has been positioned at the start of the schedule window; and

when the data item moved to the second queue has been positioned at the start of the schedule window, the setting means resets the schedule window.

9. An information processing method for scheduling order of data reading from a recording medium, comprising:

a first sorting step for sorting data items recorded on the recording medium based on playback times of the data items; and

a second sorting step for sorting, based on recording positions of the data items on the recording medium, the data items sorted based on the playback times thereof in the first sorting step, and using the sorting result as a result of scheduling the order of data reading from the recording

medium.

10.   An information processing method according to
claim 9, wherein at least one of video data and audio data
is recorded in predetermined units on the recording medium.

11.   An information processing method according to
claim 10, wherein the video data and the audio data in the
predetermined units are alternately recorded on the
recording medium.

12.   An information processing method according to
claim 9, wherein the first sorting step comprises:
a first detecting step for detecting, from data items
which have not been moved to a first queue among the data
items recorded on the recording medium, a data item having
earliest playback time; and
a first moving step for moving and storing the data
item detected in the first detecting step in the first queue.

13.   An information processing method according to
claim 12, wherein the second sorting step comprises:
a setting step for setting a schedule window
corresponding to a range of the data items stored in the
first queue, the range of the data items being subject to

sorting based on the recording positions of the data items
on the recording medium;

a second detecting step for detecting, based on the
recording positions of the data items on the recording
medium, from the range of the data items in the schedule
window, a data item to be moved to a second queue; and

a second moving step for moving the data item detected
in the second detecting step to the second queue.

14. An information processing method according to
claim 13, wherein:

the second sorting step further comprises a first
determination step for determining whether or not the second
queue is empty; and

when the second queue is empty, from the range of the
data items in the schedule window, a data item which has an
initial recording position on the recording medium is
detected in the second detecting step.

15. An information processing method according to
claim 14, wherein:

the second sorting step further comprises a second
determination step for determining whether or not the range
of the data items in the schedule window includes a data
item recorded behind the recording position on the recording

medium of the end data item of the second queue;

when the second queue is not empty, and the range of the data items in the schedule window does not include a data item recorded behind the recording position on the recording medium of the end data item of the second queue, from the range of the data items in the schedule window, a data item which has an initial recording position is detected in the second detecting step; and

when the second queue is not empty, and the range of the data items in the schedule window includes a data item recorded behind the recording position on the recording medium of the end data item of the second queue, in the second detecting step, from the range of the data items in the schedule window, a data item is detected which is recorded behind the recording position on the recording medium of the end data item of the second queue and which is closest to the recording position on the recording medium of the end data item of the second queue.

16. An information processing method according to claim 13, wherein:

the sorting step further comprises a third determination step for determining whether or not the data item moved to the second queue has been positioned at the start of the schedule window; and

when the data item moved to the second queue has been positioned at the start of the schedule window, in the setting step, the schedule window is reset.

17.   A program for causing a computer to perform an information processing method for scheduling order of data reading from a recording medium, the information processing method comprising:

a first sorting step for sorting data items recorded on the recording medium based on playback times of the data items; and

a second sorting step for sorting, based on recording positions of the data items on the recording medium, the data items sorted based on the playback times thereof in the first sorting step, and using the sorting result as a result of scheduling the order of data reading from the recording medium.

18.   A program according to claim 17, wherein at least one of video data and audio data is recorded in predetermined units on the recording medium.

19.   A program according to claim 18, wherein the video data and the audio data in the predetermined units are alternately recorded on the recording medium.

20. A program according to claim 17, wherein the first sorting step comprises:

a first detecting step for detecting, from data items which have not been moved to a first queue among the data items recorded on the recording medium, a data item having earliest playback time; and

a first moving step for moving and storing the data item detected in the first detecting step in the first queue.

21. A program according to claim 20, wherein the second sorting step comprises:

a setting step for setting a schedule window corresponding to a range of the data items stored in the first queue, the range of the data items being subject to sorting based on the recording positions of the data items on the recording medium;

a second detecting step for detecting, based on the recording positions of the data items on the recording medium, from the range of the data items in the schedule window, a data item to be moved to a second queue; and

a second moving step for moving the data item detected in the second detecting step to the second queue.

22. A program according to claim 21, wherein:

the second sorting step further comprises a first
determination step for determining whether or not the second
queue is empty; and

when the second queue is empty, from the range of the
data items in the schedule window, a data item which has an
initial recording position on the recording medium is
detected in the second detecting step.

23.   A program according to claim 22, wherein:

the second sorting step further comprises a second
determination step for determining whether or not the range
of the data items in the schedule window includes a data
item recorded behind the recording position on the recording
medium of the end data item of the second queue;

when the second queue is not empty, and the range of
the data items in the schedule window does not include a
data item which is recorded behind the recording position on
the recording medium of the end data item of the second
queue, from the range of the data items in the schedule
window, a data item which has an initial recording position
is detected in the second detecting step; and

when the second queue is not empty, and the range of
the data items in the schedule window includes a data item
recorded behind the recording position on the recording
medium of the end data item of the second queue, in the

second detecting step, from the range of the data items in the schedule window, a data item is detected which is recorded behind the recording position on the recording medium of the end data item of the second queue and which is closest to the recording position on the recording medium of the end data item of the second queue.

24. A program according to claim 21, wherein:

the sorting step further comprises a third determination step for determining whether or not the data item moved to the second queue has been positioned at the start of the schedule window; and

when the data item moved to the second queue has been positioned at the start of the schedule window, in the setting step, the schedule window is reset.